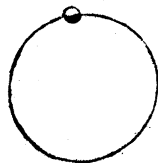


Solem, debili quadam luce, idque sub tota fere emersione, in hunc fere modum.

Sive illa in margine Veneris apparens, inflectioni radiorum Solis, five refractioni in atmosphæra Veneris, fit tribuenda, disquirant alii.




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XXXIX. *An Account of the Observations made on the same Transit in Sweden: In a Letter from Mr. Peter Wargentin, Secretary to the Royal Academy of Sciences in Sweden, and F. R. S. to Mr. John Ellicot, F. R. S. Translated from the French.*

S I R,

Stockholm, Aug. 7, 1761.

Read Nov 12, 1761. **I**N a letter, dated June 8th, I communicated to Dr. Birch, Secretary to the Royal Society, my observations upon the transit of Venus. Having since received some other good observations of this phænomenon, I thought the communicating them to you, would give you some pleasure.

At Torneo in Lapland, Messieurs Lagerborn and Hellant very happily observed both the entrance and exit of Venus, with telescopes of 32 and 20 feet focal lengths. The principal times observed were as follows:

Exterior

	Exterior con- tact at the en- trance.			Interior con- tact at the en- trance.			Interior con- tact at the exit.			Total exit.		
	h	'	''	h	'	''	h	'	''	h	'	''
Lagerborn	3	45	44	4	4	1	9	54	22	10	12	18
Hellant	3	45	51	4	3	59	9	54	8	10	12	22

Mr. Hellant is esteemed a very good observer. The difference between the meridians of Paris and Torneo, is computed to be  $1^h 27' 28''$ , very nearly.

At Abo, the capital of Finland, situated in latitude  $60^\circ 27'$ , longitude east of Paris  $1^h 19' 17''$ , Mr. Jufander observed with a telescope of 20 feet;

	h	'	''
The interior contact, at the entrance to be at	3	55	50
Beginning of the exit, at - - - - -	9	46	59
Total emersion, at - - - - -	10	4	42

At Hernofand, a city in Sweden, in latitude  $60^\circ 38'$ , and longitude  $1^h 2' 12''$  east of the meridian of Paris, Messieurs Gifter and Strom observed, with telescopes of 20 feet.

	h	'	''	h	'	''	h	'	''	h	'	''
Mr. Gifter - - - -	3	38	26	9	29	21	9	46	40			
Mr. Strom 3 20 40	3	38	35	-	-	-	9	46	47			

At the observatory at Upsal, Messieurs Strömer, Metlander Mallet, and Bergman, made the following observations, with three telescopes of 20 feet, and a reflector of 18 inches. The difference of meridians between Upsal and Paris is  $1^h 1' 10''$ .

Mr.

	h	'	"	h	'	"	h	'	"	h	'	"
Mr. Mallet	3	20	45	3	37	56	9	28	3	9	46	29
Mr. Strömer	-	-	-	3	38	5	9	28	7	9	46	13
Mr. Bergman	-	-	-	3	37	43	9	28	9	9	46	30

At Lund in Scanie, Mr. Schenmark observed, with a telescope of 21 feet, The interior contact of the exit was  $9^h 10' 44''$ , doubtful, being cloudy; total emersion  $9^h 29' 14''$ . This city is  $43' 50''$  to the east of the meridian of Paris.

According to the observations made at the observatory at Stockholm, by Mr. Klingensfierna and myself;

	h	'	"	h	'	"	h	'	"	h	'	"
Mr. Klingensfierna	-	-	-	3	39	29	9	30	11	9	48	8
Mine	-	-	-	3	21	37	3	39	23	9	30	8

The difference of meridians between Paris and Stockholm is  $1^h 2' 50''$  or  $52''$ , at most.

In these observations, I made use of an excellent telescope, of 21 Swedish feet, and Mr. Klingensfierna observed with one of Mr. Dollond's telescopes, of 10 feet, with an eye-glass fitted to it, which magnified the object more than 140 times.

In comparing these observations together, you will perceive, that they do not agree so near as was hoped for; and those which were made at Paris, agree but little better. I should be very glad to hear how the English observers have succeeded, both at London, and at St. Helena; I therefore desire you would procure for me those observations, which have been communicated to the Royal Society, to whom you may present

present these from Sweden, if you think them deserving your notice, which I hope you will.

I have the honour to be,

With the most perfect esteem,

S I R,

Your most obedient

humble servant,

Wargentin.

XL. *Observationes Veneris sub Sole visæ, habitæ Parisiis, die 6<sup>a</sup> Junii 1761, in palatio Luxemburgi, quas Regiæ Societati Londinensi, venerationis suæ obsequium, offert Hieronymus De la Lande, Acad. Reg. Scient. Parisinæ Socius, Regiusque Mathematicos Professor.*

Read Nov. 19,  
1761.

**N**ubes in oriente persistentes ab horâ quartâ usque ad septimam visum Solis rapuerunt, earumque intervalla unicam observationem permiserunt, quæ sequitur, cum sextante hexapedali factam.

Temp.